

ABSTRACT

## HIGH SPEED LINKING MODULE

A device for converting at least four parallel data streams on respective input data lines into one serial data stream on a fiber optic data line. The device includes a first multiplexer for multiplexing at least two of the parallel data streams into a first intermediate output stream and a second multiplexer for multiplexing at least two other of the parallel data streams into a second intermediate output stream. A serializing transmitter is coupled to the first and second multiplexers for serializing the first and second intermediate output streams into the serial data stream. A signal synchronizes the serializing of the first and second intermediate output streams and tags output data in the serial data stream as corresponding to data from each of the respective input data lines. In-band messaging is used to transfer commands and status messages between devices without affecting ongoing data stream communications.